With the Compliments.
of Sereno Watson

CONTRIBUTIONS TO AMERICAN BOTANY. XVIII.

I. Descriptions of some new North American Species, chiefly of the United States, with a Revision of the American Species of the Genus Erythronium.

II. Descriptions of new Mexican Species, collected chiefly by Mr. C. G. Pringle in 1889 and 1890.

III. Upon a wild Species of Zea from Mexico.

IV. Notes upon a Collection of Plants from the Island of Ascension.

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XI.

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Presented April 8, 1891.

1. *Descriptions of some new North American Species, chiefly of the United States, with a Revision of the American Species of the Genus* Erythronium.

Arabis Macounii. Biennial, branched from the base, slender, pubescent below with mostly stellate spreading hairs, glabrous above or but sparingly puberulent, a foot high: leaves small and narrow, ½ inch long or less, the lower very rarely few-toothed, the cauline sagittate at base: flowers very small, pale rose-color, 2 lines long: pods very narrow, 1 to 1½ inches long and about ½ line broad, glabrous, slightly curved, mostly divaricate on very slender pedicels 2 to 4 lines long, acute, the stigma nearly sessile: seeds (immature) approximately 1-rowed, apparently wingless. — At Revelstoke, British Columbia; collected by Prof. John Macoun, May, 1890. Near *A. hirsuta*.

Erysimum arenicola. Caudex much branched and densely tufted, the branches slender; flowering stems about 6 inches high: leaves narrowly oblanceolate, sparingly toothed, acute or acutish, attenuate to a slender base, about an inch long, sparsely appressed-pubescent: pedicels slender, spreading and 2 or 3 lines long in fruit: calyx 4 lines long: pods ascending, slender, 1½ to 2 inches long and less than a line broad, compressed and thin-valved, usually attenuate above to a slender style tipped by the depressed lobed stigma: seeds narrowly oblong, a line long; the cotyledons very obliquely incumbent. — In volcanic sand on the Olympic Mountains, Washington, at 5,000 feet altitude; collected by Mr. C. V. Piper, September, 1890 (n. 916).

Silene Macounii. Stems very slender, from a slender branching rootstock, a foot high, minutely puberulent, glandular above: leaves linear-oblanceolate, 3 inches long or less: flowers few, on pedicels ½ to 1 inch long; calyx inflated, oblong-campanulate, 4 or 5 lines long, with short obtuse teeth; petals little exserted (6 lines long), with a broadly auricled glabrous claw and large thin quadrate and nearly

entire appendages, the flabelliform bifid blade with a linear tooth on each side: capsule equalling the calyx, oblong-ovate, on a carpophore 1½ lines long. — Summit of the Rocky Mountains, British Columbia; collected by Prof. J. Macoun, August, 1890.

Mimulus (Eumimulus) filicaulis. A dwarf annual with very slender and thread-like lax stems, 1 to 4 inches high, simple or nearly so, sparsely glandular-pubescent: leaves thin and nerveless, entire, oblanceolate or oblong or the lowest obovate, obtuse, narrowed to a very short petiole: flowers on long pedicels, the narrowly oblong or turbinate calyx 3 lines long, acutely and unequally toothed; corolla funnelform with a nearly equally lobed limb, 7 to 9 lines long, bright rose-color in various shades, with more or less of purple and yellow in the throat and tube. — Collected by J. W. Congdon on Snow Creek, Mariposa County, California, in June, 1890. Near *M. Palmeri*, from which it differs in its much more slender and less branching habit, the leaves more narrowed at base, the calyx-teeth acuter, and the corolla different in shape and coloring.

Cladothrix cryptantha. Apparently annual, canescent throughout with a fine dense much branched pubescence, slender, repeatedly branched somewhat di- or trichotomously: leaves alternate, or subopposite at the forks, ovate to obovate, 4 to 6 lines long or less, on slender petioles: flowers in close clusters of 2 to 5, involucrate and more or less enclosed by two or more sessile floral leaves which are united below into a somewhat indurated cup; bracts and bractlets minute; sepals thin, ½ line long: utricle included, thin and hyaline, obtuse, the 2-lobed stigma nearly sessile. — Collected by Dr. C. C. Parry at Colton, California, in 1881 (n. 274), and by Mr. C. R. Orcutt in November, 1890 (n. 2186), at Canso Creek in San Diego County.

Eriogonum (Ganysma) minutiflorum. Of the *E. pusillum* group, very slender, 6 inches high or less, diffusely branching, glabrous, excepting the small ovate rosulate leaves which are densely white-tomentose on both sides, becoming less tomentose above; bracts minute; peduncles filiform, divaricately spreading, 3 to 8 lines long; involucres very small (⅓ line long), broadly turbinate-campanulate, purplish: perianth yellow, minutely puberulent, very small. — Found by Mr. C. R. Orcutt in the desert region of San Diego County, California, April, 1890. Resembling *E. subreniforme*, but the leaves not reniform nor cordate, and the smaller flowers more pubescent.

Eriogonum deserticola. Apparently an annual of the same group (base and foliage unknown), tall, several times dichotomously

branched, white-tomentose becoming mostly glabrous and yellowish green; bracts all small and deltoid, involucres shortly pedicellate or subsessile toward the end of the branches, erect or spreading, turbinate-campanulate, a line long: perianth villous, the elliptical segments yellow with greenish or reddish midveins, 1 to 1½ lines long. — In the southwestern part of the Colorado desert, San Diego County, California; C. R. Orcutt, November, 1890 (n. 2189).

ERYTHRONIUM, Linn. It is within the limits of the United States that this genus reaches its fullest development. On this continent it is found scarcely beyond our own boundaries, and in the Old World it shows a far narrower range of variation than here. Much unavoidable uncertainty has long existed respecting the species of western North America. Having taken advantage of such opportunities as presented themselves for studying these various forms, I now propose, though with some hesitation, the following revision of the genus. For material and for field-notes upon the difficult western species, thanks are due especially to Mr. Carl Purdy, G. R. Kleeberger, and Volney Rattan, of California, Mrs. P. G. Barrett, Thomas Howell, and W. C. Cusick, of Oregon, L. F. Henderson and W. N. Suksdorf, of Washington, and Prof. John Macoun of the Canadian Geological Survey.

The eastern and western species are conveniently separated, as will be seen, upon good distinctive characters. The Old World species, considered as a unit, is most nearly allied to the eastern group in its always solitary flowers, the want of a gibbous crest upon the petals, and the shape of the capsule, while in its mode of underground propagation it more resembles the western species.

The characters that must be relied upon for the distinction of species are rarely constant. The thinly coated corms produce new ones, either as in the eastern species at base within the old coats or at the extremity of long offshoots, or as in nearly all the western species along a rhizome, sometimes in near succession for several years, sometimes at intervals of an inch or less. The habit of spreading by offshoots, where it occurs at all, appears to depend much upon the season or locality, and is usually attended with a diminished production of flowers and seeds. The form of the leaves is only exceptionally of any value. In all the species the leaves in the cauline pair are unequal, one being as a rule narrower and more acuminate than the other. The mottling varies greatly in degree in the same species, or may even be wholly wanting, and like the minute dotting, which is generally present, it very often disappears in dried specimens. Only in *E. propullans* do

the petioles form a closed sheath about the peduncle, and only in *E. Hartwegi* are they alternate instead of opposite.

The auricles or appendages at the base of the inner petals are uniform and constant, so far as known, in each species where they occur, though always greatly obscured in other than fresh flowers. Of the eastern species, *E. Americanum* is the only one with such special organs, having a rather thickened auricle upon each side of the petal, somewhat as in *E. dens-canis*. The western species, with the exception of *E. Howellii*, have the inner petals appendaged with a transverse crest of four more or less saccate gibbosities, the two inner the more prominent, the outer forming lateral auricles, so that the crests of the three petals when appressed to the ovary close completely over the basal cavity of the perianth. These crests differ in some degree in the different species, but usually not in such a way as to make a description of the differences easy; nor have they all been examined in the fresh flower.

The stamens show little that is specifically characteristic. They are in two unequal series, with more or less dilated filaments, the yellow, white, or occasionally purple anthers varying in length under different conditions, a moistened anther becoming very much longer than the same when dry. The relative lengths of the style and stamens vary with the age of the flower. The coherence or divergence of the stigmas appears to be in general a good sectional character. In all cases, however, the stigmas are at first coherent, and where separation occurs it may be more or less delayed after anthesis and more or less complete. Even in species with persistently coherent stigmas it is probable that separation occasionally occurs. The form of the capsule, while differing in the two groups, is essentially uniform in each. In the western species it varies much in length, in some species more acute than in others, in some proportionately wider. No marked differences have been observed in the seeds.

* Eastern species. Corm small (6 to 9 lines long), oblong-ovate, often propagating by lengthened offshoots, but also producing new corms more or less frequently at the base of the old: scapes low, 1-flowered: inner petals not crested: capsule obovate (mostly 5 to 9 lines long).

\+ Offshoots produced from the base of the corm.

1. E. Americanum, Ker. Leaves mottled: flowers yellow, often tinged without with purple and finely dotted within; segments 10 to 20 lines long, the inner auricled near the base: style scarcely lobed at the summit. — Bot. Mag. t. 1113; Bigelow, Med. Bot. t. 58; Barton, Fl. N. Amer. t. 33; Gray, Struct. and Syst. Bot., fig. 1247–1251;

Meehan, Nat. Flowers, 1st Ser., 1, t. 17. *E. flavum*, Smith; Raf. Med. Fl. fig. 35. The "*E. Caroliniannum*, Walt." of Poiret, Roemer & Schultes, etc., was based upon Walter's "*Anonymos, Erythronio affinis?*," which must have been *Uvularia perfoliata*. Damp open woodlands and banks; Nova Scotia to Ontario and Minnesota, and south to Florida and Arkansas.

2. E. ALBIDUM, Nutt. Leaves mottled: flowers white with more or less of a bluish or purplish tinge, yellow within near the base, not dotted, the segments strongly recurved, not at all auricled: stigmas short (1 to 1½ lines long), becoming recurved. — Similar localities; eastern New York to Ontario and Minnesota, and south to Pennsylvania, Virginia, Tennessee, and central Texas. The var. *coloratum*, Sterns (Torr. Bull. 15. 111), is the more deeply colored form.

3. E. MESOCHOREUM, Knerr. Resembling the last, but the leaves narrower (¼ to 1 inch wide) and not mottled; segments of the perianth not recurved; capsule larger (6 to 15 lines long). — Grassy prairies or wooded slopes, from western Iowa to central and eastern Kansas. First noted, as a variety of *E. albidum*, by Mr. R. Burgess (Bot. Gaz. 2. 115) and Mr. M. H. Panton (same, 2. 123); perhaps well separated from that species by Prof. E. B. Knerr (Midland College Monthly, 2. 5).

← ← Offshoots produced from the sheathed portion of the scape.

4. E. PROPULLANS, Gray. Leaves small (2 to 4 inches long) above the close sheath, from within the base of which the offshoot springs, slightly mottled: flowers rose-color with yellow base, small (½ inch long), the inner segments not grooved nor auricled: stigmas united; capsule unknown. — Am. Nat. 5. 228, fig. 74. Southern Ontario (*fide* Macoun); southern Minnesota.

* * Western species. Corms usually elongated, rarely if at all propagating by offshoots (except in n. 6), the new corms borne upon a short rhizome: scapes often tall, 1-several-flowered: inner petals auricled and transversely crested at base (except in n. 14) with four prominent gibbosities: capsule oblong, attenuate below.

← Stigmas at length distinct and recurved.

→ Leaves not mottled (or rarely ?): flowers bright yellow.

5. E. GRANDIFLORUM, Pursh. Scape 1- (rarely 2–3-) flowered, becoming 1 or 2 feet high: perianth strongly recurved, 1½ to 2 inches long: capsule 1 to 2 inches long, rounded or slightly retuse at the summit. — Lindl. Bot. Reg. t. 1786. *E. grandiflorum*, var. *minus*, Hook., Morren, etc. Mountains of northern Idaho, Washington, and British Columbia near the boundary.

Var. PARVIFLORUM. Scape usually low; flowers smaller, the segments 12 to 15 lines long. — *E. Nuttallianum*, Regel, Gartenfl. t. 695, not R. & S.; *E. grandiflorum*, Murray, Gard. Chron. 1874, fig. 173. In the mountains from Colorado and northern Utah to British America, in the Blue Mountains of Oregon, and in the Cascade Mountains of Washington and British Columbia; the more common form.

The var. *Murrayi* of Morren (Belg. Hort. 26. 105, t. 6) is a doubtful cultivated form similar to this, but said to have mottled leaves. In a single specimen collected by Mr. Henderson above the timber-line on the Olympic Mountains, Washington, the leaves are evidently mottled.

-+ -+ Leaves more or less mottled. Pacific Coast species.

= Corms producing slender offshoots from the base.

6. E. HARTWEGI, Watson. Corms small (6 to 8 lines long): leaves (rarely 3) often alternate: flowers 1 to 3, pale yellow with an orange base, the segments 1 to 2 inches long by 3 to 6 lines broad or more, spreading or scarcely recurved: capsule unknown. — Proc. Am. Acad. 14. 271. In the Sierra Nevada, California, from Mariposa to Plumas Counties. This species, or a similar one, is also reported from near Healdsburg, Sonoma County (*R. H. Thompson*).

= = Corms (1 to 2 inches long) produced in succession upon a usually short rhizome.

7. E. REVOLUTUM, Smith. Leaves attenuate to a usually narrow petiole: scape often over a foot high, 1–2-flowered: perianth "white" to pale yellow, yellow at base, the segments narrowly lanceolate (3 or 4 lines broad): capsule abruptly acutish at the apex, 12 to 15 lines long. — Rees' Cyc. *E. grandiflorum*, var. *Smithii*, Hook. *E. grandiflorum*, var. *revolutum*, Baker. Vancouver Island to the lower Columbia valley. Described by Smith as having purplish flowers, and an original specimen in Herb. Kew bears the note "fl. rubr. purp." by Sir W. J. Hooker, but it is rarely that the petals assume a pinkish tinge in drying, and the ground for the statement is unknown. No purple-flowered species is now found on Vancouver's Island, where Menzies's specimens were collected.

Var. BOLANDERI. Usually low, 1–3- (rarely 4-) flowered; perianth white with yellowish centre, becoming rose-purple; appendages very prominent. — In the redwoods of Colusa, Mendocino, and Trinity Counties, California.

8. E. GIGANTEUM, Lindl. Leaves narrowed to a usually short and broadly margined petiole: scape often tall, 1–6-flowered or more: perianth cream-color (often described as white) with a light yellow or

orange base and sometimes a transverse darker or brownish band, the segments more broadly lanceolate (1 to 1½ inches long by 4 to 7 lines broad): capsule oblong-obovate (7 to 9 lines long), very obtuse or retuse at the summit. — Hook. Bot. Mag. t. 5714 (*E. grandiflorum*, Fl. de Serres, t. 2117). *E. grandiflorum*, var. *albiflorum*, Hook. *E. giganteum*, var. *albiflorum*, Gard. Chron. 1888[1], fig. 74. From the lower Columbia valley southward to Mendocino and Sonoma Counties, California: March to June.

9. E. MONTANUM. Like the last, but the leaves (not mottled?) more or less abruptly contracted and rounded at base; scape 1–2-flowered; perianth white with an orange base, often drying pinkish. — On the high mountains of Oregon and Washington (Mt. Hood, Mt. Adams, etc.; *Mrs. P. G. Barrett*, *Howell*, and *Suksdorf*); in flower from July to September.

← ← Style short-clavate, undivided; scape a foot high or less; leaves mottled; corms as in the last group.

→ Inner petals appendaged.

10. E. CITRINUM, Watson. Corms unknown: scape 3-flowered: segments of the perianth broadly lanceolate, an inch long, strongly recurved, light yellow with an orange base, the tips becoming pinkish; crest rather thin: capsule unknown. — Proc. Am. Acad. 22. 480. Deer Creek Mountains, southern Oregon (*T. Howell*).

11. E. HENDERSONI, Watson. Scape 1–3-flowered: perianth 1 to 1½ inches long, strongly revolute, pale purple with a very dark purple and yellowish base, the lobes of the crest subglobose-inflated: capsule an inch long, very obtuse. — Proc. Am. Acad. 22. 479; Gard. Chron. 1888[1], fig. 86; Garden and Forest, 1, fig. 50; Bot. Mag. t. 7017. In the mountains of southern Oregon.

12. E. PURPURASCENS, Watson. Corm 1 to 2 inches long: leaves undulate: scape 1–8-flowered: perianth 9 to 12 lines long, spreading, light yellow tinged with purple, deep orange at base: capsule obtuse or retuse, 1 to 1¼ inches long. — Proc. Am. Acad. 12. 277. In the Sierra Nevada, from Placer to Plumas Counties, California. Inflorescence more crowded than in any other species.

→ ← Inner petals not appendaged.

13. E. HOWELLII, Watson. Scape 1–3-flowered. perianth recurved, pale yellow with deep orange base, becoming pinkish: capsule unknown. — Proc. Am. Acad. 22. 480. Josephine County, southern Oregon (*T. Howell*).

Zostera Oregana. Stem slender: leaves 1½ to 2 lines broad, rather faintly 3-nerved: spathes 2 or 3 inches long, very obtuse, with a short scarious crest but without a foliar appendage at the summit; spadix short-acuminate: utricle with a long straight beak; seed (immature) narrowly oblong, with 16 longitudinal striæ. — Collected by Elihu Hall in 1871, probably near the mouth of the Columbia River, Oregon; in Herb. Gray, without number, and not mentioned in the published list of his distributed Oregon collection. Readily distinguished by the unappendaged spathe. The spadix examined was about 15-fruited; the anthers had all fallen.

Zostera Pacifica. Stem stout; cauline leaves 4 to 6 lines broad, 5–9-nerved, those on the branches 2 lines broad and 3-nerved: spathe nearly 3 inches long, with a long foliar appendage; spadix acutish, many-flowered: utricle with a long straight beak; seed broadly elliptical, compressed, 1½ lines long, not evidently striate but appearing under the microscope very finely transversely striolate. — About Puget Sound (*Rev. R. D. Nevius*); Monterey (*Dr. C. L. Anderson*); Santa Barbara (*Mrs. R. F. Bingham*). A specimen received from Mr. Nevius is eight feet long, with some of the leaves four feet in length. The anthers are mostly arranged in vertical pairs, alternating with solitary ovaries. The seed is remarkably distinct from that of *Z. marina*, which is shorter, oblong, terete, and conspicuously 20-striate. The species has been described by Mr. Morong (Torr. Bull. 13. 160) as *Z. marina*, var. (?) *latifolia*.

2. *Descriptions of new Mexican Species, collected chiefly by Mr. C. G. Pringle in* 1889 *and* 1890.

Ranunculus vagans. Near *R. hydrocharoides* and *R. stolonifer*, low, spreading by elongated stolons, glabrous: leaves narrowly lanceolate or the lowermost ovate-lanceolate, entire or with a few often slender teeth toward the apex: petals 8 to 10, oblong-obovate, about 2½ lines long and nearly twice the length of the sepals, with a prominent gland above the narrow claw: carpels smooth, in a dense globose head 2½ lines in diameter. — Found in shallow ponds near Flor de Maria in the State of Mexico, August, 1890 (n. 3177).

Nasturtium bracteatum. Annual, erect, unbranched, glabrous or slightly and finely pubescent (6 inches high or less): leaves sessile, auricled at base, narrowly oblong, pinnately toothed, 6 to 9 lines long: raceme many-flowered and becoming elongated; fruiting pedicels divaricately spreading, 3 lines long, the lower solitary in the axils of the

upper leaves: flowers apparently white, a line long: pod elliptical, 1½ to 2 lines long, beaked with a short style; stigma small. — *N. palustre*, Benth. Pl. Hartw. 9. Described from a few small but fruiting specimens in Herb. Gray, collected by Hartweg (n. 39) at Aguas Calientes in the Mexican State of the same name. The lower axillary pedicels are an unusual character.

Sisymbrium multiracemosum. Finely stellate-pubescent throughout, the lax and slender stems procumbent, branching, 2 feet long or more: leaves narrowly lanceolate, attenuate to both ends, not auricled at base, sinuately serrulate or sometimes serrate, 1 to 2 inches long: racemes in most of the axils, on very short leafy peduncles or nearly sessile, 1 to 3 inches long in fruit: flowers very small, white: pods divaricately spreading on pedicels about a line long, pubescent, narrow and subcylindrical, about 3 lines long, beaked by a short slender style: seeds in one row, 8 to 10 in each cell. — At Las Canoas, San Luis Potosi; October, 1890 (n. 3522). A species of strongly marked habit.

Polygala subalata. Annual, the several stems erect from an ascending base, branching above, narrowly wing-angled, leafy, glabrous or slightly puberulent, 6 inches high or less: leaves mostly verticillate, oblanceolate, very acute, 4 to 6 lines long, scabrous on the margin, the lowermost small, obovate to spatulate and obtusish, the upper becoming linear; spikes sessile, dense, acuminate, becoming elongated and looser: flowers small, very shortly pedicellate; petals white with a broad green or purplish midvein: capsule very broadly elliptical, equalling the petals (a line long): seeds oblong, sparsely covered with a very fine appressed silky pubescence, the linear appendages of the hilum as long as the seed. — In low grounds at Flor de Maria, State of Mexico, September, 1890 (n. 3210). Resembling *P. alba*, especially its var. *suspecta*, from which it is most positively distinguished by the much less pubescent seed nearly equally broad at both ends.

Talinum Coahuilense. Stems very short and leafy, from a slender branching rootstock or rhizome bearing oblong or ovate tubers: leaves rhombic-obovate, cuneate at base and nearly sessile, inflated-margined, ½ inch long or less: flowers solitary on short pedicels (½ inch long); sepals round-ovate, acute, strongly concave, 2 to 2½ lines long; petals round-obovate, 3 lines long: stamens numerous with very slender filaments and short anthers: capsule ovate. — On limestone hills at Carneros Pass, Coahuila; May, 1890 (n. 3606). Much resembling *T. brevifolium* and *T. brevicaule*, especially the latter, differing in the tuberous roots and broader leaves and sepals.

Sida Alamosana. Perennial (?), herbaceous, erect, slender and branching, finely glandular-pubescent: stipules filiform, 2 to 4 lines long; leaves on slender petioles, ovate to lanceolate, acuminate, more or less cordate at base, rather acutely serrate, 2½ inches long or less, somewhat hairy especially on the nerves (not glandular-pubescent), the hairs simple or forked: peduncles axillary, slender, mostly an inch long or more: corolla "orange" (apparently white), 3 lines long, exceeding the acuminate-toothed calyx: carpels 5, little over a line long, ovate, glabrous except the summit, thin-walled, terminating in a contracted truncate dehiscent cavity above the seed. — Collected at Alamos, Sonora, by Dr. Edward Palmer (n. 683) in September, 1890. Closely resembling *S. ulmifolia* in habit, but more glandular-pubescent, with longer filiform stipules, more acutely serrate leaves, and especially distinguished by the unusual character of the carpels.

Ayenia Berlandieri, Watson, Proc. Am. Acad. 21. 419, in part. Mr. Pringle has collected flowering specimens which accord in foliage with the original specimens of Berlandier, but with different flowers from those of the plants of Dr. Palmer's Chihuahuan collection upon which my description was largely based. It becomes necessary to separate the two forms and to redescribe this species. — Plant 3 to 6 feet high, the herbaceous branches more or less strongly angled and sulcate: leaves ovate to ovate-lanceolate, acute, rounded or slightly cordate at base, densely pubescent beneath with a soft stellate tomentum, greener above, serrulate, 2 to 4 inches long: peduncles 1–2-flowered, fascicled in the axils or in a naked terminal inflorescence: calyx and petals dark purple, the former 2½ lines long, the blade of the petal parted into two broad quadrate and truncate lobes: anthers 3-celled: ovary and capsule rather long-muricate. — Berlandier; Pringle (n. 3309), in low lands at Las Palmas, San Luis Potosi.

Ayenia Jaliscana. Differing from *A. Berlandieri* in its more terete branches and thinner, less pubescent, and more coarsely toothed leaves; flowers smaller and paler, the sepals 1½ lines long, and the lobes of the petals oblong and acutish; anthers 2-celled and capsule more shortly muricate. — Southwestern Chihuahua, Dr. E. Palmer (n. 19 and 83), and apparently also at Guaymas (n. 243 of his 1887 collection).

Bunchosia Pringlei. A shrub or small tree (12 to 20 feet high); branchlets and inflorescence appressed-hairy: leaves thin, oblong, obtusely short-acuminate, acutish at base, eglandular, glabrous above, sparsely hairy beneath, 3 or 4 inches long by 1 or 2 broad, on petioles 3 lines long: racemes mostly solitary in the axils and simple, shorter

than the leaves; pedicels glanduliferous, stout and 2 or 3 lines long in fruit: ovary pubescent, globose, beaked by the subpersistent style; fruit 2–3-lobed, the seeds 4 lines in diameter. — In Tamasopo Cañon, San Luis Potosi; July, 1890 (n. 3540). Near *B. lanceolata* of Turczaninow.

Sargentia (?) Pringlei. A shrub, 10 to 15 feet high: leaves coriaceous, pinnately 1-foliolate or sometimes palmately 3-foliolate, the lower surface (with the petioles and branchlets) pubescent with very short spreading hairs, glabrate above; leaflets oblong-oblanceolate, acutish or obtuse, cuneate at base, entire, puncticulate, 1 to 2½ inches long: sterile flowers small, in a very short terminal few-flowered panicle, with very short triangular sepals and 4 (or 5) narrow oblanceolate valvate petals, concave and spreading: disk inconspicuous or none, the stout filaments (usually 4) inserted at the base of the small abortive ovary; anther-cells distinct to above the middle, acute at base, rounded above: fruit on short stout pedicels solitary at the ends of short branchlets, depressed-globose (6 to 9 lines broad), mostly 2–3-celled and 2–3-seeded, the oblong-obovate seeds 6 lines long. — The fruit is essentially that of *S. Greggii*, though less lobed, but the flowers differ so widely in being usually tetramerous, with valvate petals, no disk, and dissimilar anthers, that the correctness of the reference to *Sargentia* is very doubtful. The fertile flowers are as yet, however, unknown. In *S. Greggii* the anthers are cordate with an acute apex. Found in the mountains of San Luis Potosi at San José Pass, in June, 1890, in fruit, and in July in flower (n. 3220). It appears to have been also collected by Berlandier in 1828 at Monterey, without flowers or fruit, the specimen in the Gray Herbarium without number, under the name of *Choisya ternata*.

Xanthoxylum Pringlei. A tree, becoming 40 feet high, glabrous: leaflets 3 to 5 pairs, lanceolate, acuminate, rounded at base, entire, coriaceous, epunctate or with a few large glandular dots near the apex, 1½ to 2½ inches long on petiolules 1 to 2 lines long: flowers diœcious, very numerous in large terminal corymbs; pistillate flowers with a very short 3-lobed calyx and three elliptical petals: carpels solitary; fruit globose, tuberculate, 1½ lines in diameter. — In Tamasopo Cañon, San Luis Potosi, in June, in flower; October, in fruit (n. 3102).

NEOPRINGLEA. As the genus *Llavea* of Liebmann is long antedated by the *Llavea* of Lagasca, a genus of ferns that is generally considered as well founded, it is necessary to substitute another name for that of Liebmann. I take pleasure in dedicating the genus to one

most worthy, whose botanical collections in Mexico have been unexcelled in character and who has added very greatly to our knowledge of the Mexican flora.* The genus has hitherto been placed provisionally in the *Celastraceæ*. Its affinities are rather with *Alvaradoa* in the *Sapindaceæ*.

NEOPRINGLEA INTEGRIFOLIA. (*Llavea integrifolia*, Hemsl.) Complete specimens of this hitherto imperfectly known diœcious shrub have been collected by Mr. Pringle on San José Pass, San Luis Potosi; in flower, July (n. 3137), and in fruit, October (n. 3248). The staminate flowers are in short crowded axillary racemes, tetramerous, the four greenish petals orbicular, pubescent, not exceeding the sepals: stamens 12, in threes opposite to the petals, in the sinuses and intervals between the pubescent lobes of the disk; pistillate flowers without petals or disk, the 3-winged ovary 3-celled at base, with solitary anatropous ovules on the axis: capsule 1-celled, 1-seeded; seed compressed-obovate, the embryo straight in rather thin albumen, with flat cotyledons and rather slender inferior radicle.

DESMODIUM SUBSPICATUM. Stems erect from a narrow fusiform root, somewhat woody at base, glabrous or slightly puberulent, 18 inches high: leaves nearly sessile, the single leaflet linear-lanceolate, obtusish at base, acuminate and very acute, 1 to 3½ inches long, glabrous or nearly so: racemes pubescent, terminal, simple and spike-like, the small greenish flowers solitary or in pairs, on pedicels a line long or less, the lanceolate bract about equalling the calyx: legumes erect, pubescent, 9 lines long or less, 3–5-jointed, nearly equally indented on both sutures and the joints elliptical. — On grassy hillsides at Las Canoas, San Luis Potosi; July, 1890 (n. 3211). Near *D. angustifolium*, DC., as that species is described.

DESMODIUM AMANS. Tall, erect, the stem, petioles and inflorescence clothed with short hooked hairs: stipules attenuate from a broad base, villous; petioles about ½ inch long; leaflets rather thick and reticulately veined, narrowly oblong, acute, rounded at base, glabrous above, villous beneath, 1½ to 2 inches long by 6 lines broad; stipels subulate, attenuate: racemes in a naked terminal panicle; bracts ovate, acuminate, 3 lines long; pedicels becoming 3 or 4 lines long: calyx-teeth exceeding the tube, unequal, the lower longer and narrower; petals purple, 3 lines long: legume 5–7-jointed, with the two sutures nearly equally sinuate, the suborbicular joints 1½ lines

* The *Pringleophytum* dedicated to Mr. Pringle by Dr. Gray is identical with *Berginia*, Harvey, as was first suggested by Mr. Brandegee.

broad, densely uncinulate-hispid. — On hillsides at Las Canoas, San Luis Potosi; October, 1890 (n. 3291).

Cologania Jaliscana. This name is to be substituted for *C. Pringlei* upon page 147 of the last volume of the Proceedings, on account of a previous species so named in Mr. Pringle's collection of 1887.

Begonia (Weilbachia) Pringlei. Rhizome slender, covered with brown ovate acuminate glabrous stipules: petioles tomentose, 2 to 4 inches long; leaves obliquely rhombic-ovate, acute, cordate at base, coarsely and subsinuately toothed, sparsely pubescent above, somewhat tomentose and densely papillose beneath, 2 or 3 inches long: peduncle 1 to 8 inches high, red, slightly pubescent, 4–6-flowered at the summit: flowers apetalous, the two sepals round-reniform or orbicular, 4 to 6 lines broad: fruit with two broad truncate-rounded wings, the third smaller. — On cold ledges in Tamasopo Cañon, San Luis Obispo; October, 1890 (n. 3514).

Eryngium Mexicanum. A span high, spreading, twice branched: basal leaves with a nodose petiole sheathing at base, the blade linear or linear-lanceolate, sparsely serrate, usually with a pair of similar but shorter lobes at base; cauline leaves nearly sessile, similar: heads pedunculate, ovate or oblong-ovate, 4 to 6 lines long, terminated by one or sometimes two or three slender foliaceous appendages, entire or occasionally cleft above, and subtended by about ten longer linear acute bracts, whitish above and usually with a slender tooth on each side; bractlets none or minute: fruit covered with numerous white scales, the calyx-lobes dark blue. — In wet meadows at Del Rio, State of Mexico; August, 1890 (n. 3229).

Arracacia Mariana. Stems decumbent from a branching caudex, slender, simple or sparsely branched, a foot long, glabrous: leaves near the base, thin, pinnate, the leaflets 4 or 5 pairs, an inch long or often much less, acute, sharply serrate, the lower usually with a pair of linear lobes at base: umbels on long terminal peduncles: bracts of the involucre and involucels narrowly linear; rays (6 to 10) in fruit 4 or 5 lines long: flowers yellow: fruit nearly sessile, ovate, acutish, 3 or 4 lines long, strongly and obtusely ribbed; ventral sinus of the seed completely closed. — On hillsides at Flor de Maria, State of Mexico; July, 1890 (n. 3480).

Arracacia multifida. Tall and stout, glabrous: leaves ample (a foot long or more), sessile upon a short sheathing base, ternate and several times pinnate, the ultimate segments very narrowly linear, entire, acute, an inch long or usually less: umbels on stout peduncles,

without involucre or involucels; rays numerous, 1 to $1\frac{3}{4}$ inches long in fruit; pedicels 2 or 3 lines long: fruit 3 or 4 lines long, oblong, the carpels narrowed at each end and beaked by the stout erect stylophore and style, acutely angled by the thin prominent ribs; vittæ quite variable, 1 to 3 in the broad intervals and usually 2 on the narrow commissure; the deep sulcus very narrow. — On hills at Rio Hondo, State of Mexico; August, 1890 (n. 3620).

Chiomelia Pringlei. A small tree (15 feet high); branchlets pubescent with short spreading hairs: leaves oblong-ovate, rounded at base, short-acuminate, finely pubescent beneath, slightly scabrous above, $1\frac{1}{2}$ to 3 inches long, on petiolcs 1 or 2 lines long: peduncles slender, 6 to 12 lines long; flowers few, sessile or nearly so, subcapitate or in a very small loose cyme; calyx pubescent, equally toothed, scarcely a line long; corolla reddish, 3 or 4 lines long, rather broadly tubular and but slightly dilated above, the lobes appressed-pubescent, a line long: fruit compressed-oblong, sparsely pubescent, 3 lines long. — In Tamasopo Cañon, San Luis Potosi; August, 1890 (n. 3209).

Crusea megalocarpa. (*Spermacoce megalocarpa*, Gray, Proc. Am. Acad. 21. 381.) Collected by Mr. Pringle in the barranca near Guadalajara; September, 1889 (n. 2968). This species was referred by Dr. Gray to the section *Borreria* of *Spermacoce*, but the chartaceous cocci separate from a persistent septum which is cleft nearly to the middle and crowned by the persistent linear-lobed calyx-limb. It therefore accords perfectly with *Crusea* as that genus was characterized in De Candolle's Prodromus and by Bentham & Hooker in the Genera Plantarum. The "calycis limbi lobi persistentes" of the latter is criticised by Dr. Gray, and rightly if it were to be understood as meaning that the calyx-limb is persistent upon the cocci. It always separates from the cocci, and may either remain persistent upon the persistent axis, as is the statement of De Candolle, or break away from this also, as in *C. subulata* and some other species.

Eupatorium Madrense. Branches woody, slender and lax, the branchlets finely pubescent, leafy: leaves opposite, small (an inch long), very shortly pedicellate, ovate-lanceolate, acute, rounded or subcordate at base, 3-nerved, serrate except toward the apex, roughish above, tomentose beneath: heads few (3 to 6), terminal and axillary on short peduncles, many-flowered, narrow below, 4 lines high; involucre 3 lines long, shorter than the disk, its unequal scales in several series, nerved, subtomentose, acute, the outermost narrowly ovate, the innermost linear: achenes slightly hispid toward the base on the acute

angles; pappus in a single series, slightly scabrous. — In the Sierra Madre near Monterey; June, 1888 (n. 2201).

Eupatorium (?) Chapalense. Woody, the branches terete, glabrous: leaves opposite, ovate-lanceolate, acute, rounded at base but decurrent upon the slender petiole, 3–5-nerved above the base, serrate, puberulent above on the veins and villous-tomentose on the nerves beneath, 1½ to 2½ inches long, the petioles about an inch long: heads on slender bracteate puberulent peduncles in a dense terminal corymb, 20-flowered or more, narrow at base; involucral scales mostly nearly equal, 4 lines long, thin, linear, acute, pubescent; receptacle depressed-conical, smooth and naked: achenes (immature) apparently obtusely pentagonal, papillose; pappus-bristles in more than one row, distinctly barbellate, unequal, the outer very short. — In the mountains near Lake Chapala; December, 1889 (n. 2974). Near *E. multiserratum*, Schultz Bip., in habit and involucre, but the pluriseriate unequal pappus is abnormal. The unequal pappus suggests *Piptothrix*, but the setæ are much more numerous and not caducous, while the heads, flowers, and pappus are twice longer than in either of the species of that genus.

OLIGONEMA, a new genus of the homochromous *Asteroideæ*. Heads many-flowered, radiate and heterogamous, the ray- and disk-flowers all fertile. Involucre broadly campanulate, of many nearly equal herbaceous scales in several series, the inner series becoming somewhat coriaceous with herbaceous tips. Receptacle nearly flat, naked. Ligules linear, yellow, slightly 3-toothed; disk-corollas tubular, the throat scarcely dilated and about equalling the oblong acute lobes. Anthers obtuse at base. Style-branches tipped with attenuate conical appendages. Achenes of the ray compressed-triangular, those of the disk obcompressed, elliptical, glabrous, rather thin-margined, truncate, the thickened margin of the summit bearing 1 to 4 very delicate lax scabrellate deciduous hairs. — A stout annual aquatic or marsh herb, with alternate linear entire leaves, the submerged pinnately parted; heads rather large, terminal on the branches. A genus most nearly related to *Grindelia*, strongly marked by its habit and the characters of the achenes and pappus.

O. heterophyllum. Mostly glabrous, somewhat glandular-pubescent above, the stem 2 or 3 feet high, fistulous, sending out delicate rootlets from the submerged nodes: leaves sessile, clasping, acuminate, 2 or 3 inches long, the submerged pinnate with narrowly linear entire or toothed segments: heads half an inch broad, the orange ligules 6 to 8 lines long: involucral scales lanceolate, acuminate: achenes

about 1½ lines long, somewhat longer than the delicate pappus. — In shallow water at Del Rio, State of Mexico ; August, 1890 (n. 3236).

Achætogeron linearifolius. Biennial or perennial (?), branching from the base, the stems ascending or decumbent, a foot high or less, somewhat strigose-pubescent: leaves numerous, dark green, narrowly linear, entire or rarely with one or two narrow lateral lobes, mostly 1 to 1½ inches long, acute, narrowed to the base: heads hemispherical (4 or 5 lines in diameter), with hemispherical receptacle and linear acuminate involucral bracts: rays very numerous in several rows: achenes (immature) compressed (?), sparsely hispidulous; pappus coroniform, dentate and laciniately denticulate, nearly as long as the proper tube of the corolla. — Bluffs and plains near Flor de Maria, State of Mexico ; Sept., 1890 (n. 3242). The distinctions between the genera *Aphanostephus* and *Achætogeron* are very vaguely defined, the latter genus appearing to rest upon the compressed Erigeron-like achenes.

Psilactis tenuis. Erect, slender (2 feet high), branching above, the slender spreading branches simple or few-flowered, rough-hispid with spreading hairs: cauline leaves oblong-oblanceolate, acute, narrowed to a short winged petiole, sharply serrate, 1 to 1½ inches long, those on the branches gradually smaller and narrower: heads solitary and terminal, small (2 lines high); involucral scales thin and scarcely herbaceous, narrowly linear, acuminate: ligules purplish, 3 lines long: achenes sparsely pubescent; pappus of disk-achenes of numerous (about 30) barbellate setæ. — In the Sierra Madre near Monterey ; June, 1888 (n. 2238).

Aster Carnerosanus. Stems a foot high or less, from slender rootstocks, slender, purplish, pubescent: leaves oblanceolate, 1½ inches long or less, mostly entire, glabrous or nearly so, shortly ciliate, the bracteal oblong, 2 or 3 lines long: heads middle-sized (5 lines high), solitary on the short branches, the numerous foliaceous-tipped scales somewhat spreading, oblanceolate, acute or the innermost subacuminate: rays pale purple. — At Carneros Pass in the mountains of Coahuila ; Sept., 1889 (n. 2859). Rather closely resembling *A. surculosus* of the Alleghanies, but with smaller heads.

Melampodium glabrum. Nearly glabrous (slightly scabrous above, especially on the peduncles), decumbent, branching: leaves oblong- to linear-lanceolate, scarcely narrowed to the broad clasping base, acutish, sparingly toothed, 1¼ inches long or less: heads small (2 to 2½ lines high), on slender peduncles, the 5 or 6 ovate scales obtuse or acutish: ligules oblong, shorter than the scales, yellow:

achenes triangular-obovate, over a line long, transversely rugose. — Valley near Irapuata, Guanajuato; Sept., 1889 (n. 2821). Near *M. montanum*.

Melampodium (Unxia) bibracteatum. Annual, glabrous, a foot high; leaves oblong to oblanceolate, acute, sparingly toothed, ½ to 1½ inches long: heads sessile; outer involucre of two foliaceous broadly ovate opposite bracts, 3 lines long, the inner saccate, closely enclosing and conformable to the achenes, thin and somewhat reticulated, unappendaged: disk-flowers 5, sterile; ray-flowers 5, the yellowish ligule very short (½ line long or less): achenes obliquely obovate and compressed, smooth and coriaceous, a line long; pappus none. — In fields at Del Rio, State of Mexico; August, 1890 (n. 3230).

Tithonia macrophylla. Leaves thin, scabrous above and on the veins beneath, the cauline large (about a foot long) with a broadly ovate blade cuneate from a shallow sinus and decurrent into the winged petiole, deeply 3-lobed, the lobes narrowly acuminate and serrate; uppermost leaves much smaller, ovate, not lobed: peduncles and heads sparingly pubescent; outer involucral scales foliaceous, narrowly lanceolate, acuminate, an inch long or more, the inner somewhat shorter and broader: rays orange, 1½ inches long: achenes appressed-silky, 4 lines long; pappus of two awns and a crown of six broad and very obtuse denticulate scales half as long. — Barranca, near Guadalajara; Sept., 1889 (n. 2798).

Viguiera leptocaulis. Annual; stem erect, slender, 3 or 4 feet high, sparingly branched and somewhat strigose above, glabrous below: leaves opposite, narrowly lanceolate, abruptly cuneate to a short petiole, attenuate upward from near the base, sparsely serrulate, very scabrous above, 4 inches long: heads solitary on the few branches; involucral scales linear-lanceolate, long-acuminate: ray-flowers sterile; ligules orange, an inch long: achenes glabrous, compressed, bearing a single caducous attenuate chaffy palea dilated and lacerate at base. — In the Sierra Madre near Monterey: July, 1888 (n. 2247).

Otopappus acuminatus. Tall, scabrous: leaves opposite on slender petioles (3 to 6 lines long), ovate- to oblong-lanceolate, narrowly long-acuminate, rounded or subcordate at base, distantly glandular-serrulate, very scabrous above and scabrous-hirsute on the veins beneath, 3 to 6 inches long by ¾ to 1½ broad: heads in terminal and axillary pedunculate corymbs, broad and many-flowered, radiate, 3 lines high; involucral scales in several series, short, narrow, somewhat squarrosely tipped: ligules small (1½ lines long): achenes of the ray

3-winged, the two outer wings narrow, the inner broader, produced above and adnate to the awn of the pappus; disk-achenes compressed, similarly winged on one edge, scarcely at all on the other, the pappus reduced to the two very unequal processes at the angles: appendages of the style-branches acuminate. — Barranca near Guadalajara; October, 1889 (n. 2999.)

Spilanthes Botterii. Annual, branching, about a foot high, sparingly pubescent or glabrate: leaves ovate to oblong-ovate, cuneate at base and shortly petiolate, acute or shortly acuminate, 1 or 2 inches long: peduncles slender, mostly equalling or somewhat exceeding the leaves, nearly glabrous: heads ovate-conical, 3 to 5 lines long, discoid, the glabrous narrowly oblanceolate involucral scales 2 or 3 lines long: achenes ciliate, the sides nearly glabrous, striate; pappus of two slender bristles. — Near Guadalajara; November, 1889 (n. 2946); also collected in Orizaba by Botteri (n. 825 in Herb. Gray).

Salmea Palmeri. Stem erect, rather stout, 3 to 5 feet high or more, branching, glabrous or slightly pubescent above: leaves subcoriaceous, opposite, very shortly petiolate, ovate to ovate-lanceolate, acute or acuminate, rounded at base, distantly glandular-serrate or serrulate, strongly veined and slightly pubescent, scabrous on the margin, 2 to 4 inches long: heads 2 to 5 lines high, few to many, closely corymbose; scales acute, finely pubescent above, as also the chaff of the receptacle: corolla-tube as long as the throat, the limb deeply cleft: achenes compressed or more or less acutely 3–4-angled, short-ciliate on the angles, the sides nearly glabrous; pappus of two nearly equal attenuate bristle-like paleæ, or of three or four more unequal ones. — Near Guadalajara; n. 528 Palmer and n. 2345 Pringle (1889), both distributed through some inadvertence as *S. grandiceps*, Cass., to which they have little resemblance; also Pringle's n. 2155 and 2170 of 1889.

Dahlia dissecta. Stems slender, lax, ascending from a decumbent or procumbent woody base, $1\frac{1}{2}$ to 2 feet high, glabrous throughout: leaves deltoid in outline, 3 to 6 inches long, twice or sometimes thrice pinnate, the lanceolate to linear segments mostly laciniately lobed: heads long-pedunculate; outer involucral scales suborbicular, 3 lines long, the inner narrowly oblong, 6 to 8 lines long; rays purple or "mauve-colored," 1 to $1\frac{1}{4}$ inches long: achenes linear-oblanceolate, truncate, 4 lines long, nerved and with a strong central ridge on both sides, somewhat minutely pubescent on the inner surface. — On limestone ledges at San José Pass, San Luis Potosi; July, 1890 (n. 3167).

Dahlia pubescens. Stem erect from a cluster of small tubers, 1½ to 3 feet high, leafy, more or less pubescent with mostly short stiff pointed hairs: leaves pinnate, 3 to 4 inches long, the 5 to 7 leaflets (an inch long) ovate to lanceolate, coarsely and acutely toothed: heads erect on long peduncles, coarsely pubescent at base, the outer scales ovate-lanceolate, acutish, 4 or 5 lines long, the inner lanceolate, 9 lines long in fruit; rays purple, 12 to 15 lines long: achenes nearly as in the last, but usually shorter (3 lines long) and broader. — On limestone bluffs at Flor de Maria, State of Mexico; August, 1890 (n. 3164).

Bidens dahlioides. Low and slender, glabrous, bearing tubers along the slender branches of a divided rootstock: lower or lowermost leaves entire, lanceolate or oblanceolate, acute, attenuate to the petiole; the upper (3 inches long) pinnately 3–5-lobed, the terminal segment broadly ovate to lanceolate, less deeply 3-lobed, the lateral ovate-lanceolate, entire: heads solitary upon elongated terminal peduncles, the purplish ray 1½ inches long: scales of the two involucres similar and nearly equal, many-nerved, 6 lines long: achenes oblanceolate, 5 lines long, flattened, with two short stout retrorsely bearded awns at the angles. — Dahlia-like in habit, but with the awned achenes and short-appendaged style-branches of *Bidens*. On hillsides at Flor. de Maria, State of Mexico; Sept., 1890 (n. 3168).

Bahia Schaffneri. Annual, branching from the base, more or less decumbent or procumbent and strigulose-puberulent: leaves subternately decompound, the segments linear and usually short: heads about 3 lines high, the involucre of 8 to 10 broadly oblanceolate obtuse or acutish bracts: ligules deep yellow, short: achenes very narrowly obpyramidal, somewhat hispid on the angles, especially near the base, 1½ lines long or more: pappus of five obovate imbricate scales, about ½ line long, nearly equalling the slender corolla-tube. — Sandy plains near San Luis Potosi; May, 1889 (n. 3028). Also collected by Dr. Schaffner (n. 327, in part) in the same locality, and by Parry & Palmer (n. 494), referred to *B. anthemoides*. It is the same, moreover, as a plant cultivated from Mexican seeds in the Jardin des Plantes in 1838 and 1839, of which there are specimens in Herb. Gray. *B. anthemoides*, Gray, with which the species has been confused, is represented in Herb. Gray by specimens collected at Toluca by Berlandier, and by 327 Schaffner (in part), probably from the valley of Mexico; it is also 3143 Pringle, collected near the city of Mexico. As described and figured in HBK. Nov. Gen. & Spec., it is characterized by white ligules and by a much shorter and broader and more pubescent achene.

Senecio Jaliscana. Perennial, tall and erect, rather stout, white-tomentose throughout: leaves ovate to oblong-ovate, thickish, subcordate or truncate at base, acute, sinuately and acutely few-toothed and glandular-denticulate, densely tomentose beneath, subglabrate above, 3 to 4 inches long or less: heads discoid, many-flowered, in rather dense compound corymbs terminating short peduncle-like branches which are bracteate only above; involucre short (2 lines long), of 8 or 10 imbricated scales, calyculate at base: achenes glabrous; pappus white, the somewhat rigid setæ scabrous and often thickened at the tips. — With the foliage and habit nearly of *S. sinuatus*, but the involucre and pappus of *S. barba-Johannis*. In the Chapala Mountains near Guadalajara; December, 1889 (n 2931).

Cacalia (Conophora) poculifera. Nearly glabrous, puberulent above, 3 or 4 feet high, branching and naked above: leaves few, the lower long-petiolate, centrally peltate with depressed centre, 6 to 8 inches broad, deeply 7–9-lobed with narrow sinuses, the broad lobes sinuately toothed; upper leaves subreniform, lobed and decurrent into a short very broadly auriculate-clasping petiole, or cordate-ovate, sessile and coarsely and acutely toothed: heads 5-flowered on short pedicels in rather dense terminal corymbs; involucre of 5 glabrous scales, 2 lines long, slightly calyculate; receptacle flat, naked: corolla-lobes as long as the tube: achenes glabrous or nearly so; pappus fuscous. — Near Guadalajara, Jalisco; July, 1889 (n. 2879).

Cnicus velatus. Stem slender, erect from a tuberous-fascicled root, branched above: radical leaves linear-oblanceolate, 6 to 12 inches long by ½ to 1 broad, long-petiolate, glabrous or slightly floccose-pubescent above, white-tomentose beneath, entire with short scattered spines upon the margin or sparsely sinuate-lobed, the lobes acute and sparingly spinulose; cauline leaves sessile and decurrent, linear-lanceolate, the short lobes and auricles slightly more strongly spinulose: heads solitary on the elongated branches, campanulate, 9 to 12 lines high, the lanceolate outer scales tipped with a short appressed spine and covered by a veil of floccose hairs: flowers pale purple: anther-tips attenuate. — In low meadows, Flor de Maria, State of Mexico; August, 1890 (n. 3228).

Cnicus (Echinais) linearifolius. Stem erect, very leafy and wing-angled, simple: leaves linear, the radical 12 to 15 inches long by an inch broad or less, petiolate, pinnately many-lobed to the middle, the broad lobes and sinuses undulately margined and spinulose, roughish above, white-tomentose beneath; the cauline similar but smaller, sessile and decurrent, acuminate, erect: heads small (9 lines high),

broad, nearly sessile in a terminal cluster; outer scales shortly spinose-tipped, lanceolate, scarcely dilated above, the margin entire or somewhat lacerate: corolla purple: anther-tips acuminate. — In low meadows near the city of Mexico; August, 1890 (n. 3145).

Perezia collina. Stout and tall, glabrous or the inflorescence slightly puberulent: leaves thick and rigid, broadly oblanceolate, acute, narrowed to the sessile auriculate base, irregularly toothed, 6 to 7 inches long or less, the upper ones narrower: heads in rather close panicles terminal on the branches, 8-flowered, the narrow acuminate scales somewhat tomentose, not glandular-puberulent, the longer 5 lines long: achenes (2½ lines long) glandular-puberulent and hispidulous. — In foliage and habit very closely resembling *P. rigida* (which is collected near the same locality), differing in the narrower acuminate involucral scales, rather fewer-flowered heads, and longer hispidulous achenes. The five nearly equal long-linear lobes of the corolla are coherent into the two lips only at the tips, or are at length entirely distinct. Hills near Guadalajara; December, 1888 (n. 2123).

Styrax Jaliscana. Leaves round-ovate to oblong-obovate, acute, at base obtuse or somewhat cuneate, white-tomentose and reticulately veined beneath, green and becoming sparsely pubescent above, 2½ to 4 inches long, on petioles 2 or 3 lines long: peduncles axillary and 1-flowered, or terminal and 2–5-flowered: calyx very shortly toothed; corolla 6 to 8 lines long, the pubescent filaments adnate to the short tube: fruit depressed-globose, valvately dehiscent, usually 3-seeded, 5 or 6 lines broad. — In the Sierra de San Esteban and on rocky hills near Guadalajara; May and November, 1890 (n. 3486 and 2978).

Schultesia Mexicana. Glabrous; stems stout, erect, 2 or 3 inches high, sparingly branched above with short erect branches, 5–9-flowered: leaves oblong-ovate or -lanceolate, sessile and clasping, 3 to 6 lines long: flowers shortly pedicellate; calyx strongly winged, nerveless excepting a stout nerve at the base of each wing, 5 lines long, not cleft to the middle, the teeth long-acuminate; wings strongly cross-veined; corolla yellowish, becoming purplish, 7 to 9 lines long: filaments not appendaged; anthers oblong, sagittate. — Damp places on the plains near Guadalajara; October, 1889 (n. 2598). Distributed as a new species of *Microcala*.

Ehretia Mexicana. A shrub, with the young branches tuberculate and somewhat hispid: leaves lanceolate, short-acuminate, subcuneate at base, serrate, minutely appressed-strigulose above, pubescent and reticulately veined beneath, 1 or 2 inches long on a pubescent petiole 2 to 4 lines long: flowers small, in dense compound terminal

pubescent corymbs; calyx deeply cleft, ½ to nearly 1 line long; corolla white, nearly 2 lines long: fruit unknown. — At the base of the mountains near Lake Chapala; May, 1890 (n. 3085).

Boerhaavia octandra. Stems slender, dichotomously and divaricately branched, glabrous or puberulent above: leaves broadly ovate, acutish or abruptly short-acuminate, rounded at base, sparsely pubescent and shortly ciliate, ½ to 1¾ inches long: umbels terminal, few – many-flowered, the flowers nearly sessile; perianth tubular to funnelform with a short slightly dilated limb, green with a tinge of red, 2 lines long: stamens 8, exserted; fruit oblong, 4 lines long by 1½ broad, glabrous with a few scattered tubercles. — Much resembling *B. scandens* in habit and foliage. On river-banks near Guadalajara; October, 1889 (n. 2958).

Aristolochia (Gymnolobus) nana. Stems procumbent, from a slender subterranean branching rhizome, slender and flexuous, 3 to 6 inches long, leafy, nearly glabrous: leaves from reniform-cordate to deltoid-cordate, very obtuse or acutish and with broad rounded basal lobes, 3 to 8 lines long, on short petioles: flowers solitary in the axils, nearly sessile; ovary pubescent, narrow, 2 lines long; perianth dark brown, narrowly tubular and nearly straight, 1½ to 2½ inches long, the elongated narrow blade exceeding the tube, the scarcely dilated base of the tube closed by a glabrous diaphragm with a circular central orifice: anthers 5: capsule depressed-globose, 6 lines broad. — Collected by Prof. A. Dugès of Guanajuato in 1883 at Guadalcazar in the State of San Luis Potosi, and by Mr. Pringle in August, 1890 (n. 3630), on dry limestone hills at San José Pass in the same State.

Piper (Enckea) Jaliscanum. Shrubby, 8 feet high, glabrous: leaves oblong-ovate to round-ovate, acute or short-acuminate, abruptly short-cuneate at base, 5–7-nerved, 1½ to 3 inches long, on slender petioles 3 to 7 lines long, not punctate, becoming thickish, rather rigid and glaucous: spikes slender, on peduncles nearly equalling the petioles, 9 to 15 lines long, becoming 2½ inches long in fruit, densely flowered: flowers 6-androus: fruit sessile, oblong, obtusely quadrangular, a line long. — Cañons near Guadalajara, in dense moist shade, Dr. E. Palmer, June, 1886 (n. 122), in flower, and Mr. C. G. Pringle in December, 1888 (n. 2153), in young fruit.

Peperomia Jaliscana. Herbaceous, the short stem from a small tuberous root, glabrous: leaves 2 to 4, one radical, the rest cauline and alternate, suborbicular, cordate at base, very obtuse or rounded at the summit, thin, 2 to 5 inches broad, on petioles 6 to 12 lines long or more: spikes 2 to 4, axillary and terminal, pedunculate, slender and

elongated (4 inches long or less): flowers scattered, sunk in pits in the fleshy rhachis: bract very minute and fleshy: stamens two, scarcely exserted: ovary oblique-ovate, the stigma apical and sessile. — On rich shaded banks in the barranca near Guadalajara; September, 1889 (n. 2953).

Euphorbia (Cyttarospermum) digitata. Near *E. dioscoreoides*, probably annual and 2 feet high, erect, with rather numerous very slender ascending branches, glabrous: rameal leaves about equalling the very slender petioles, ovate-lanceolate, acute, rounded at base, 6 to 9 lines long, gradually diminishing upward, basally peltate, entire, ciliate; peduncles solitary in the axils (rarely in pairs), usually exceeding the leaves, binodose and glandular-bracteate (bracts very rarely filiform), bearing only a single terminal involucre: involucres turbinate-campanulate, $\frac{2}{3}$ line long; appendages of the roundish glands regularly 4–6-parted into narrowly linear segments, or these sometimes more or less united: capsule long-exserted: seeds $\frac{3}{4}$ line long, ovate, pitted, the pits with a central cavity and their margins rather obscurely tuberculate. — On limestone hills near Las Palmas, San Luis Potosi; October, 1890 (n. 3525). Distinguished from *E. dioscoreoides* by its habit, less pubescence, solitary glandular-bracteate peduncles and more divided appendages. The seeds are also smaller, scarcely more than half as large, similarly pitted, but the margins of the pits less distinctly tuberculate.

Euphorbia (Cyttarospermum) subpeltata. Perennial, the stems somewhat woody from a thickened or subtuberous root, erect, glabrous, with numerous ascending or divaricate branches: leaves alternate, on very slender petioles (3 to 8 lines long), semi-orbicular, short-cuneate at base and attached to the petiole slightly within the margin, entire, glabrous, 3 to 8 lines broad: involucres in short slender axillary racemes, with elongated filiform bracts, campanulate, $\frac{1}{2}$ line long; lobes minute, lacerate; glands very small, subreniform, the purple or purplish appendages palmately divided into 3 or 4 linear-subulate obtuse lobes as long as the involucral tube: capsule glabrous, the subglobose greenish seeds ($\frac{2}{3}$ line long) marked with broad shallow pits and somewhat tuberculate. — On limestone ledges in Tamasopo Cañon, San Luis Potosi; August and September, 1890 (n. 3272). Nearly allied to *E. dioscoreoides*.

Euphorbia (Tithymalus) misella. Annual, erect, branching alternately below, dichotomously above, low and slender (2 or 3 inches high), slightly pubescent: lower leaves alternate, the upper opposite, petiolate, round-obovate, entire, 1 or 2 lines long: involucres solitary

in the forks, pedunculate, scarcely $\frac{1}{4}$ line long, the lobes fimbriate, the glands (3 or 4) broadly stipitate, minute, rounded, entire: capsule smooth, $\frac{1}{3}$ line long: seed ovate, smooth or very obscurely indented, ecarunculate. — On wet grassy borders of prairie ponds, Flor de Maria, State of Mexico; October, 1890 (n. 3305). Not nearly related to any other of our species of the section.

Phyllanthus Pringlei. A small tree (15 feet high), with smooth gray bark on the numerous branches, and the slender herbaceous branchlets sulcate-angled: leaves distichous, thin, round-ovate to orbicular or round-obovate, acutish or usually obtuse or retuse at the summit, as also at base, 6 to 12 lines long or less, on petioles about a line long; stipules short, obtuse and scarious: pistillate flowers solitary (or only 2 or 3) in the axils, on very slender pedicels 2 to 5 lines long; calyx 6-parted, the oblong segments nearly equal; disk cupulate; styles bifid, spreading: staminate flowers and fruit unknown. — On limestone ledges at Las Palmas, San Luis Potosi; June, 1890 (n. 3532). The material is insufficient for a full description, but it seems quite unlike any known species that is likely to be found in Mexico.

Croton (Eucroton) calvescens. Shrubby, herbaceous above, the young branches and leaves densely covered with a white or grayish stellate tomentum, soon glabrate and more or less scabrous with a rigid substellate puberulence: stipules obsolete; leaves ovate to ovate-lanceolate, acuminate, rounded and biglandular at base, serrulate, 2 or 3 inches long on petioles 3 to 12 lines long: racemes terminal, sessile, 3 to 9 lines long, dense, pistillate at base; pedicels a line long: stamens 9 to 12; calyx-lobes of pistillate flowers deltoid, obtuse, not becoming reflexed: ovary densely stellate-pubescent and hispid; styles once divided; capsule becoming nearly glabrous, ellipsoidal: seed smooth and shining, $2\frac{1}{2}$ lines long. — Collected by Dr. E. Palmer in 1886 (n. 706) near Chapala, Jalisco, and by Mr. Pringle in November, 1890, on hillsides near Patzcuaro in Michoacan (n. 3346). Near forms of *C. flavus*.

Croton (Eutropia) elæagnoides. A shrub or small tree, 10 to 15 feet high: leaves 3–5-nerved at base, eglandular, ovate to lanceolate, acutish to acuminate, green above and roughish with a slight scurfy puberulence, white beneath with a dense compact lepidote coating (as also the inflorescence and fruit), $\frac{3}{4}$ to 2 inches long, short-petiolate: racemes becoming 4 to 6 inches long, pistillate below; staminate flowers nearly 3 lines broad, with narrowly lanceolate acutish pubescent petals and about 15 stamens; pistillate flowers scattered, the

sepals oblong or oblong-obovate, acutish, 2 lines long: styles thrice dichotomous; capsule depressed, 2½ lines broad: seeds triangular-ovate, minutely and irregularly pitted. — At Las Palmas, San Luis Potosi; June, 1890 (n. 3080).

Manihot Pringlei. Apparently herbaceous, glabrous: leaves long-petioled, 5-parted to the base, the divisions 3 or 4 inches long, narrowly lanceolate or oblong-lanceolate, very acutely short-acuminate, usually obtusely lobed by a more or less broad and deep sinus on each side, glaucous beneath; stipules caducous, small and subulate; bracts of the long-pedunculate corymbose raceme foliaceous, narrowly lanceolate and acuminate, denticulate, 6 to 12 lines long; pedicels erect, usually bearing a bractlet or two: perianth of the staminate flowers glabrous, campanulate, 6 to 9 lines long, cleft nearly to the middle, the lobes valvate; stamens 10; disk large, 5-lobed; pistillate flowers narrower, the calyx 5-parted; disk conspicuous, entire: fruiting peduncles 2 inches long or more, erect; capsule glabrous, 8 lines long. — On limestone hills at Las Canoas, San Luis Potosi; July, 1890 (n. 3558). Somewhat resembling *M. Carthaginensis*.

Acalypha dissitiflora. Perennial, herbaceous, slender, a foot high or more, diœcious, the fertile plant branching above, the staminate simple above the base, pubescent: leaves thin, ovate, 3–5-nerved, acute or shortly acuminate, rounded at base, serrate, somewhat appressed-hairy, 1 to 1½ inches long on slender petioles 3 to 6 lines long: spikes axillary, very slender, peduncled, 1 or 2 inches long, the staminate very rarely with a pistillate flower at base, the pistillate with flowers much scattered; bracts 1-flowered, scarcely a line high, acutely 5–7-toothed, shorter than the pubescent capsule: styles short, pectinately divided. — On limestone ledges in Tamasopo Cañon, San Luis Potosi; July, 1890 (n. 3083). A strongly marked species, in Mueller's arrangement falling near *A. elliptica*.

Acalypha multispicata. Perennial, herbaceous, the numerous stems simple, about a foot high, pubescent with recurved woolly hairs; diœcious: leaves subsessile, 3–5-nerved at base, the lower ovate or obovate and obtuse or acute, the upper lanceolate and acute, serrate, strigose-pubescent, 1 or 2 inches long: spikes peduncled in nearly all the axils, the staminate slender, dense, ½ to 1 inch long, the pistillate short and mostly few- (1–10-) flowered; bracts 1-flowered, reniform, acutely 7–11-toothed, becoming 2 or 3 lines long: styles pectinately divided; capsule pubescent. — On hillsides near Guadalajara; July, 1889 (n. 2903). In the same group with the last species.

ACALYPHA FLAVESCENS. A shrub 5 to 10 feet high, the young branches and petioles somewhat pubescent: leaves thin, 3–5-nerved, ovate to ovate-lanceolate, rounded at base, acuminate, serrate, very minutely puncticulate and finely rough-puberulent, 3 to 4 inches long on petioles 1 to 1½ inches, on the short fruiting branchlets smaller and nearly sessile; stipules rigidly setaceous from a broad base: spikes sessile, 1 to 1½ inches long, the staminate axillary, dense, the pistillate terminal and rather loose; bracts small, 1-flowered, thin and loose, broadly reniform, many-nerved, 7-toothed, the teeth attenuate above: styles sparingly pinnatifid; ovary densely pubescent. — In Tamasopo Cañon, San Luis Potosi; June, 1890 (n. 3073). Near *A. carpinifolia* as grouped by Mueller.

ACALYPHA (LINOSTACHYS) LONGIPES. Suffrutescent, the young herbaceous branches sparsely pubescent: leaves thin and glabrous or slightly hispid on the nerves, 3–5-nerved at base, oblong-lanceolate to lanceolate, acuminate, subcordate at the narrowed base, serrulate, 1 or 2 or sometimes 4 inches long, on pedicels 1 to 9 lines long; stipules attenuate-subulate: staminate spikes axillary, sessile, 3 or 4 inches long; pistillate racemes pedunculate, axillary, very slender, 2 to 5 inches long, the pedicels solitary or in pairs and unequal, the longer 1 to 12 lines long; bracts minute: ovary densely muricate. — On limestone ledges in Tamasopo Cañon, San Luis Obispo; June, 1890 (n. 3082).

SEBASTIANIA PRINGLEI. A glabrous shrub with slender branches, dicœcious or the sterile aments with sometimes (?) a pistillate flower at base: leaves rather thin, on short slender petioles, from elliptical and obtuse to lanceolate and acute or short-acuminate, rounded or subcuneate at base, eglandular, obsoletely crenate-serrate, 9 to 18 lines long: spikes terminal, nearly sessile; staminate bracts very short, broad and abruptly apiculate, 2-flowered; flowers nearly sessile, diandrous; calyx of 1 to 3 minute distinct linear acuminate sepals: distillate spike 2-flowered, the upper flower usually retarded in development or abortive; bract thicker, biglandular: capsule glabrous, 4 lines long, chartaceous, dehiscing dorsally and ventrally; seed not seen. — In rocky gulches at San José Pass, San Luis Potosi; July, 1890 (n. 3136, distributed as *Gymnanthes Pringlei*). An evidently closely related species, but with much larger leaves, recently collected by Dr. Palmer near Alamos in Sonora, has nearly globose seeds with a very minute caruncle. The presence of this caruncle has determined the reference of the present species to the genus *Sebastiania*, with which in other respects the characters accord very satisfactorily. Some specimens

that were received from Prof. A. Dugès, as collected by Prof. José Ramirez on the banks of the Alamos River in Sonora, closely resemble Mr. Pringle's specimens excepting that the spikes are all bisexual, the staminate bracts 4–5 flowered, and the stamens 2 or 3. The few loose seeds which accompanied these specimens show, however, no caruncle, though otherwise like those of Dr. Palmer. It is probable that this is a third species of the same genus, and that too much weight has been given to the presence of a caruncle as a generic character. The fruit of the Sonora plant is said by Ramirez to be that in which the *Carpocapsa saltitans* is found; and this is certainly true of Dr. Palmer's species. Doubtless the "jumping beans" are the product of more than one of these nearly allied shrubs. The fruit of *Sebastiania bilocularis* is found to be attacked by a similar insect, though of a different genus, which has been named by Mr. C. V. Riley *Grapholitha Sebastianiæ*. The capsules which Dr. Palmer collected, like those of the other collections, have the cocci dehiscing nearly to the base, and the rather thin valves become more or less contorted. In fruit occupied by the *Carpocapsa*, such as I have seen, the cocci remain closed, but the walls are chartaceous and complete dehiscence is readily effected.

Ficus (Urostigma) Jaliscana. Young branches, buds and petioles pubescent: leaves coriaceous, round-cordate with broad more or less overlapping basal lobes, acute, 3–5-nerved at base, 3 to 4½ inches long, on petioles nearly as long, soon glabrate above and smooth though minutely puncticulate, more puberulent beneath, especially on the nerves: fruit in pairs, on stout pedicels 2 or 3 lines long, globose, densely tomentose, 4 or 5 lines broad, subtended by a broad somewhat 3-lobed involucre; fertile flowers pedicellate, with unequal sepals, one cucullate, the others shorter, broad and concave, the style rather short and stigma subcapitate; abortive pistillate flowers similar but smaller and sessile, the style elongated and stigma bifid; staminate flowers not found: orifice of the receptacle closed within by several rows of rigid closely imbricated broad bracts. — On cliffs near Guadalajara; December, 1889 (n. 2932).

Ficus (Urostigma) Pringlei. Young branches and petioles densely pubescent with spreading hairs: leaves ovate, 3-nerved and slightly cordate at base, obtuse or acutish, 2 to 4 inches long by 1½ to 3 broad, on stout petioles 2 to 4 lines long, very rough above with fine hispidulous reticulations and prominently puncticulate, pubescent and strongly reticulated beneath: fruit sessile in pairs in the axils, involucrate with two opposite orbicular silky-pubescent bracts,

globose, finely pubescent, 4 or 5 lines broad, the orifice somewhat umbonate and closed by numerous rows of imbricated rigid bracts; flowers shortly pedicellate, the pistillate with short style and nearly equal concave petals, the staminate with two strongly cucullate sepals and a broad obtuse nearly sessile anther. — In the barrauca near Guadalajara; December, 1889 (n. 2928).

Ficus (Pharmacosyce) Guadalajarana. Young branches sparsely pubescent: leaves coriaceous, pinnately veined, oval, acutish at each end, 2 to 4½ inches long by 1 to 2¼ broad, on pubescent petioles 3 to 8 lines long, very scabrous above, reticulately veined beneath, and rather soft-pubescent especially on the prominent veins: fruit solitary, on peduncles 4 lines long, globose, very shortly stipitate and with a very narrow undulate involucre, 6 to 9 lines in diameter; the bracts within the orifice linear and strictly inflexed, rufous; staminate and gall-producing flowers on rather slender bracteate pedicels, the fertile nearly sessile; sepals of the staminate flower 4, broadly elliptical, the 2 nearly sessile anthers ovate-elliptical, obtuse; sepals of the pistillate flower linear, acuminate; bracts and sepals rufous. — In the barranca near Guadalajara; October, 1889 (n. 2947). The galls were found occupied by a black winged insect, — the only instance in which I have detected the gall-fly in any of our species, though doubtless often present. Mr. Riley informs me that he finds in this same fruit gall-insects of three different genera.

Ficus (Pharmacosyce) radulina. A tree with rather stout finely pubescent branchlets: leaves thin-coriaceous, oblong-lanceolate, acute or short-acuminate, 3–5-nerved and acutish at base, very minutely roughish-punctate above becoming smooth, glabrous beneath, 3 to 6 inches long by 1½ to 2¼ broad, on petioles 8 to 16 lines long: fruit slightly pubescent becoming glabrous, obovate-globose, 10 lines broad, involucrate with 3 short-deltoid deciduous bracts, solitary, on peduncles 2 or 3 lines long; orifice somewhat prominently margined, closed by numerous intruded narrowly linear bracts: staminate flowers pedicellate, with deeply 4–5-cleft perianth, the lobes lanceolate, acute; stamens 2 or sometimes 1, the anthers elliptical, obtuse; pistillate flowers sessile or pedicellate, 4–5-parted, the sepals narrowly linear. — Collected by Dr. Edward Palmer at Hacienda San Miguel near Batopilas in southwestern Chihuahua, in 1885 ("L."), and again in March, 1890 (n. 367), at Alamos in Sonora. The species much resembles *F. radula* and *F. anthelmintica*. In the fruit examined an apparently perfect flower was occasionally found, perhaps however only pseudo-hermaphrodite, as in the few East Indian species of which

Dr. King forms his section *Palæomorphe*, based upon this characteristic mark.

Ficus fasciculata, Watson, Proc. Am. Acad. 21. 78. This species was described from specimens in quite young fruit, found in cultivation at Guaymas, but said to be native in the same region. A very similar, if not the same, species has been recently found by Mr. Pringle (n. 3554) in Tamasopo Cañon in the mountains of San Luis Potosi, and this appears to be identical with what was collected by Ervendberg (n. 332) near Tantoyuca in Huasteca, and by Botteri still farther southward in Orizaba. The leaves, however, vary considerably in size, and from obtuse to quite sharply acuminate, and the only specimen seen by Mr. Pringle was a small erect shrub very different in habit from those at Guaymas as described by Dr. Palmer. The orifice of the small thin fruit is in the Guaymas specimens much impressed, while in the others it is conspicuously prominent, which may be due to the stage of growth. All may possibly be referrible to *F. sapida*, Miquel, of Costa Rica and Panama, as forms of one polymorphous species.

Pilea glabra. Low and herbaceous, glabrous: leaves thin, showing on the upper side numerous linear cystoliths, entire, lanceolate or broadest near the middle and narrowed each way, acutely acuminate, rounded at the very base, 3-nerved, the nerves continued to the apex, 2 to 4 inches long by 8 to 16 lines broad, on petioles an inch long: panicles pedunculate, very loose and slender, exceeding the petioles, solitary or in pairs in the axils, androgynous. — In Tamasopo Cañon, San Luis Potosi; August, 1890 (n. 3550).

Myriocarpa brachystachys. Young branches, petioles and lower surface of the leaves densely tomentose: leaves ovate, rounded at base, short-acuminate, acutely serrate, finely bullate, nearly glabrous above, 3 or 4 inches long, on petioles ½ inch long: pistillate inflorescence sparingly branched, nearly sessile, the longer spikes 3 to 5 inches long, very densely flowered: sepals lanceolate, sparingly ciliate, a third as long as the sparsely hispid ovary. — In the barranca near Guadalajara; May, 1888 (n. 3021).

Juglans Mexicana. Foliage as in *J. nigra*, but with the pubescence nearly of *J. cinerea:* fruit large, subcompressed-globose, 2¼ inches high by 2 inches broad; nut 1½ inches broad, very obtusely rugose, obtuse or slightly apiculate. — On hills at San José Pass, San Luis Potosi; October, 1890 (n. 3322).

Microstylis (Dienia) tenuis. Stem slender from a small tuberous base, 4 to 6 inches high, with a single narrowly ovate acutish

basal sheathing leaf 1½ inches long: flowers greenish ochroleucous, in an open raceme 2 inches long; pedicels very slender, 1 to 3 lines long; bracts very small: sepals and petals linear-lanceolate, acuminate, 2 lines long, the lip a little shorter, attenuate from a broader base. — In low meadows, Flor de Maria, State of Mexico; July, 1890 (n. 3186).

Spiranthes Pringlei. Root of fascicled fusiform tubers an inch long; stem slender, 4 to 8 inches high, puberulent, the scattered sheathing bracts (5 or 6) thin, acute or acuminate, ½ to 1 inch long: spike loosely few-flowered, 1 or 2 inches long, the narrowly lanceolate bracts equalling the ovaries: flowers white, the lanceolate sepals 3 lines long; lip a little longer, dilated above into a reniform undulately margined blade; column short, its crest short and obtuse; beak of the anther oblong, acutish: capsule oblong-ovate, 3 lines long. — Moist plains near Guadalajara; June, 1889 (n. 2877). Radical leaves unknown.

Spiranthes (Stenorhynchus) Jaliscana. Radical leaves unknown; stem from a fascicle of long tuberous roots, leafless, a foot high, glandular-pubescent above, partially covered with acute or short-acuminate bracts an inch long: flowers in a rather loose slender spike, subtended by linear-lanceolate acuminate bracts 4 to 6 lines long; sepals and petals red, 9 lines long, narrow above the prominent gibbosity, acuminate, the lip much narrowed above the dilated and auricled basal portion: capsule ½ inch long. — Plains near Guadalajara; June, 1889 (n. 2874). Related to *S. speciosa*.

Bletia Palmeri. Stem from a tuberous-thickened base upon a slender rootstock, slender, 1 to 1½ feet high, 6–12-flowered: leaves shorter than the stem, broadly linear, 6 to 10 inches long by 3 to 6 lines broad; bracts small: perianth purplish, 6 to 9 lines long; sepals and petals nearly equal, oblong, acutish; lip 6 lines long and nearly as broad, with broad rounded lateral lobes, a rhomboidal middle lobe, and seven very prominent contiguous laminæ extending from the base to the apex: capsule an inch long, on a pedicel 3 or 4 lines long. — Collected at Rio Blanco, Jalisco, in August, 1886, by Dr. E. Palmer (n. 336), and in the barranca near Guadalajara in May, 1889, by Mr. Pringle (n. 3023).

Govenia elliptica. Basal sheaths very broadly dilated, the longer 6 inches long; leaves lanceolate above the enclosed petiole, acuminate, 8 inches long by 3 broad, nearly equalling the loose but many-flowered spike; floral bracts lanceolate, acuminate, shorter than the slender ovaries: sepals and petals brown, 6 lines long, bilabiately

divergent, the lower sepals falcate and rather narrow, the upper oblong; lip yellow, elliptical with cuneate base, obtuse or emarginate, 3 lines long. — Cool rich cañons in the mountains near Monterey, San Luis Potosi; June, 1890 (n. 2797).

Arethusa grandiflora. Flowering stem leafless from a tuberous base (6 to 8 lines in diameter), 6 to 8 inches high, with 2 to 4 very short closely sheathing bracts; foliar stem contiguous, sheathed below and bearing two long-acuminate narrow leaves (6 to 12 lines broad) exceeding the scape: flower solitary, large, the unguiculate sepals oblong-lanceolate, acuminate, falcate, 15 lines long; lip 2 inches long or more and 1½ broad, purple, 3-lobed, erosely denticulate; column shorter than the sepals: ovary slender, 8 lines long. — Banks of cañons near Guadalajara; October, 1889 (n. 2997). The condition of the flowers prevented an examination of the androecium, but there seems no reason to doubt the correctness of the generic reference.

Pogonia (Triphora) Mexicana. Stem 2 to 4 inches high from a small tuber, sheathed at base and bearing 4 or 5 sessile leaves, the lower round-ovate, acute, about 6 lines long, the uppermost lanceolate: flowers 2 or 3, pedicellate, soon recurved; perianth 5 lines long, the greenish sepals and white petals linear, acute; lip purplish above, with three green median nerves, cuneate to a short broad claw, 3-lobed, the middle lobe subdeltoid, undulate-margined: column 3½ lines long. — In Tamasopo Cañon, San Luis Potosi; August, 1890 (n. 3557). Resembling *P. pendula*, and probably the same as Parry & Palmer's plant from the same region, mentioned by Mr. Hemsley as in Herb. Kew.

Habenaria filifera. Low, from a small oblong-ovate tuber, glabrous, 4 to 8 inches high: leaves erect, longer than the internodes, oblong-ovate or the lowest ovate, acute, mostly sheathing at base, 1 to 1½ inches long; floral bracts foliaceous, acuminate, nearly equalling the flowers: spike loosely rather few-flowered, 2 or 3 inches long: sepals acute, the lower oblong-ovate and subfalcate, the upper suborbicular, 2 lines long; petals bifid, the upper lobe oblong, falcate, nearly equalling the upper sepal, the lower filiform, 3 lines long or more; lip 3-lobed, the lobes all filiform, the lateral 4 lines long, exceeding the somewhat broader middle one; spur 7 or 8 lines long, acute, a little enlarged toward the end. — On moist grassy slopes, Flor de Maria, State of Mexico; July, 1890 (n. 3187). This was also previously collected by Mr. Pringle in Chihuahua in 1887 (n. 1375[b]), distributed as *H. Guadalajarana*, var (?). It differs from that

species in the fewer flowers, the longer lower lobes of the petals, the longer and narrower lobes of the lip, and the longer acuminate spur.

Hechtia pedicellata. Leaves long-attenuate from the base, about 2 feet long and 1½ inches broad at base, white-scurfy beneath, less so above, spinose on the margin: flowering stem flexuous, 2 or 3 feet high, covered by numerous thin lanceolate attenuate bracts serrulate on the margin: panicle glabrous, long and narrow, the numerous spreading branches about 2 inches long, mostly simple: flowers numerous, scattered, racemose; sepals and petals small, deltoid, persistent, the latter 1½ lines long: capsules oblong-ovate, 4 or 5 lines long on pedicels 2 or 3 lines long. — On ledges in the barranca near Guadalajara; October, 1889 (n. 2970).

Tillandsia (Anoplophytum) Pringlei. Basal leaves (15 to 20 or more) abruptly convolute-linear from a dilated base (1½ inches long by an inch broad), densely lepidote with appressed centrally punctate scales, 6 to 8 inches long, recurved, the cauline shorter and soon reduced to sheathing oblong acuminate or acute lepidote bracts 12 to 6 lines long: flowering stem nearly 2 feet high, very sparingly branched; spikes 4 or 5 inches long, 6–8-flowered, glabrous, slightly flexuous; calyx little exceeding the acutish narrow appressed bract and about equalling the internodes, 7 to 9 lines long; petals long-exserted. — At Las Palmas, San Luis Potosi; June, 1890 (n. 3530).

Tillandsia (Platystachys) cylindrica. Basal leaves unknown; peduncle stout, a foot long or more, covered with numerous imbricated erect scurfy-canescent leaves with dilated base 1½ inches broad and attenuate upward into an elongated convolute-linear termination a foot long: inflorescence scurfy-canescent, cylindrical, 8 to 10 inches long and over 2 inches broad, of numerous (20 to 30) distichous sessile ovate-lanceolate 8–10-flowered spikes which are 2 or 2½ inches long and an inch broad; bracts tinged with red on the margins, those on the rhachis more or less attenuate and the lower often much exceeding the spike, those of the spike acute, carinate, 1 to 1¼ inches long: calyx more or less scurfy, an inch long; petals greenish, 1¾ inches long, convolute below into a tube as long as the calyx; stamens and style exceeding the petals. — From Guanajuato, Mexico; Prof. Alfred Dugès. Near *T. Dugesii*.

Sisyrinchium platyphyllum. Perennial, glabrous; stem stout, nearly 2 feet high, branching above, broadly winged: leaves ensiform, acute, 6 or 8 inches long by 6 to 9 lines broad, smooth on the margin, the uppermost lanceolate; floral bracts equal, broad, acute, 1¼ inches long; pedicels slightly exserted: ovary small, subpuberulent: peri-

anth yellow, the segments oblong, obtuse, 9 lines long by 3 broad, faintly nerved except toward the base: free portion of filament nearly 2 lines long; style cleft nearly to the base. — In the barranca near Guadalajara; July, 1889 (n. 2876). Resembling *S. Arizonicum*, but more glabrous, the broader leaves less acuminate, and the style more deeply cleft; fruit unknown.

Agave (Littæa?) Hartmani. Acaulescent; leaves very numerous in a dense rosette (becoming a foot in diameter), broadly linear above the short dilated base, the blade 3 inches long by about ½ inch broad, very thick, convex on the back, marked on both sides by broad intersecting gray lines (as in *A. filifera*), ending abruptly in a stout brown spine 2 or 3 lines long, the margins at base acute and finely serrulate, obtuse above and bearing on each side about half a dozen very slender recurved ash-gray threads: flowers and fruit unknown.— Collected by Mr. C. V. Hartman, botanist of the Lemholtz expedition, and in cultivation at the Cambridge Botanic Garden.

Agave (Manfreda) brunnea. Acaulescent: leaves rather few, fleshy, recurved, channelled above, 4 inches long or less by 6 to 10 lines broad in the middle, the margin armed with scattered broad hooked spines a line long: flowering stem 2 feet high, with lanceolate narrowly attenuate bracts shorter than the nodes: flowers few (about 6), sessile; ovary 6 lines long; perianth 15 to 18 lines long, the narrow tube nearly twice longer than the dark brown narrowly oblong spreading lobes: stamens and style much exserted: capsule broadly ellipsoidal, about 9 lines long. — On the battle-field of Buena Vista, Tamaulipas; July, 1888 (n. 2218).

Echeandia nodosa. Roots coarsely fibrous; the base of the plant surrounded by the more or less fibrous remains of numerous dead leaves: leaves broadly linear, 18 inches long by 12 to 15 lines broad, attenuate to each end, very shortly ciliolate: stem 3 feet high, paniculately branched, the branches spreading and very slender with numerous nodes (mostly approximate, 3 to 6 lines apart, sometimes more distant); pedicels very slender, 3 to 6 lines long, jointed a little below the middle: perianth pale yellow, 5 lines long: capsule broadly elliptical, 2 or 3 lines long. — In the barranca near Guadalajara; Nov., 1888 (n. 2151). This genus must include several species, though it is difficult to identify the forms that have been described as distinct, and which have of late all been embraced under *E. terniflora*. A form more nearly resembling typical *E. terniflora* is Mr. Pringle's n. 3183 of 1890. This has long and more or less tuberous-thickened roots, and linear-lanceolate leaves attenuate from near the base to a nar-

rowly acuminate apex (4 to 8 inches long by 9 to 18 lines broad), more distinctly ciliate: branches less slender, ascending, with distant nodes; pedicels jointed toward the base; perianth yellow becoming pale, 5 or 6 lines long, and capsule 3 or 4 lines long. Both of these species must be distinct from the common form with very elongated and narrow leaves.

Dasylirion inerme. Tree-like, 20 to 30 feet high and 2 to 4 feet thick at base, with few branches: leaves 2 to 4 feet long by 6 lines broad, long-attenuate, thin and scarcely at all carinate, the margin unarmed, very minutely serrulate: inflorescence paniculate, a foot broad or more: fruit triquetrous, broadly winged, 5 or 6 lines long. — On limestone ledges at Las Palmas, San Luis Potosi; June, 1890 (n. 3108). A very remarkable species.

Tradescantia Pringlei. Stems slender, decumbent and rooting at base, glabrous or with a pubescent line on one side: leaves ovate, short-acuminate or only acute, 1 to $1\frac{3}{4}$ inches long, minutely puberulent, the short petiole and loose sheath villous-ciliate: peduncles axillary and terminal, a little shorter than the leaf, bearing a small head of nearly sessile flowers: bractlets and sepals glabrous or a little ciliate, the latter $2\frac{1}{2}$ lines long; petals purple: stamens 6, unequal, the longer with filiform filaments bearded in the middle (or one naked) and broadly oblong anthers, the shorter filaments very densely bearded in the middle with green gland-tipped hairs, the anthers orbicular; anther-cells contiguous. — In the Sierra Madre near Monterey; July, 1888 (n. 2226).

Chamædorea Pringlei. Acaulescent or nearly so: leaves erect, pinnate, nearly 3 feet high; leaflets 12 to 15 on each side of the triangular rhachis, linear-lanceolate, acuminate, 6 or 8 inches long by 3 or 4 lines broad: inflorescence dioecious, the staminate spadix arising from the base and about equalling the leaves, simple; peduncle covered with sheathing bracts; flowering rhachis about 8 inches long: flowers scattered; calyx 3-parted, the segments orbicular; corolla 3-parted, valvate; abortive ovary columnar, greenish: pistillate flowers and fruit unknown. — In Tamasopo Cañon, San Luis Potosi; June, 1890 (n. 3527). The most northern locality known for any species of the genus. While the absence of pistillate flowers renders the section to which the species belongs uncertain, it nevertheless appears to be clearly distinct from the few other known species that have a simple spadix.

Eriocaulon Jaliscanum. Dwarf: leaves subulate, acuminate, 5 to 8 lines long by nearly a line broad, little exceeding the bifid

sheaths: scapes very slender, ½ to 3 inches high; heads globose to oblong-ovate, ½ to 1½ lines high; involucral bracts scarious, white or nearly so, oblong to obovate, obtuse, the inner white becoming somewhat fuliginous, acutish: flowers trimerous, mostly pistillate, a few at the apex staminate; petals linear-spatulate, slightly ciliate above: seeds very minutely papillose. — Wet places near Guanajuato; November, 1889 (n. 2936).

3. *Upon a wild Species of* Zea *from Mexico.*

Prof. W. H. Brewer, in a communication to Dr. Sturtevant, to be found in the paper of the latter upon "Indian Corn" in the Report of the New York State Agricultural Society for 1878, gives a statement which Roezl, the well known German collector, made to him in 1869 to this effect: that "he found in the State of Guerero a *Zea* which he thinks specificially distinct, and he thinks undescribed; the ears very small, in two rows truly distichous; the ear (but not each grain separately) covered with a husk, the grain precisely like some varieties of maize, only smaller and harder." Specimens of a *Zea* which is in all probability the same that Roezl referred to were received by me in 1888 from Prof. A. Dugès of Guanajuato under the designation of *Maïs de Coyote*. It was reported to him as growing wild at Moro Leon, to the south of the State of Guanajuato, and as not at all resembling ordinary varieties of maize. The specimens sent were two very slender stalks about four feet high, with a small terminal staminate inflorescence but no trace of fertile spikes. These were probably very depauperate stalks, that had been selected for easy carriage. Accompanying them was a united cluster of about half a dozen small ears enveloped in their husks, each about two inches long and bearing a few rows of small white pointed kernels.

Some of the peculiarities of this remarkable corn were noted at the time, but nothing more was done until last year, when an attempt was made to grow it at the Botanic Garden, Cambridge, with quite unexpected results. The corn was planted early under glass, and as soon as danger from frosts was over the plants were transferred to a warm sunny location, where they soon began to grow vigorously and to send out numerous offshoots from the base. These "suckers" grew as rapidly as the main stalk, so that the plants, which had fortunately been placed some feet apart, had the appearance of two "hills," one of the two having nine and the other twelve stalks ascending from a common base. The tallest were over ten feet in height, with a diameter of nearly two inches, and they would have become yet taller had

the season permitted. Their foliage and pubescence were in every way as in ordinary field corn, the staminate tassels with conspicuously longer and more drooping racemes, the habit of growth wholly unusual. In our ordinary form the erect culm is always apparently single, bearing solitary axillary ears which are terminal upon a usually short leafy-bracted peduncle. This peduncle is in fact a lateral branch, bearing a terminal pistillate spike corresponding to the staminate panicle on the main stem. In this Mexican corn, on the other hand, the better developed stalks were evidently branched from several of the axils, the branches often becoming three or four feet in length, very leafy, and having at least a rudimentary ear in the axil of every leaf. Several, sometimes half a dozen, perfect ears were formed upon each branch. The terminal ear was always androgynous, staminate at the summit. On the shorter stems the branches were reduced to a more or less crowded axillary cluster of ears similar to the one received from Prof. Dugès. The last year's season was a long one, and there was no heavy frost in Cambridge until near the end of October. The corn however was at that time still very green, and the stalks were finally cut and stored under shelter in the hope that the ears would ripen in the stack; but upon very few did any of the kernels mature.

The natural supposition was that we had here at last the original wild state of our cultivated maize. A careful comparison of the two, as thorough as the material at hand of the cultivated forms would permit, has led me first to doubt the probability of this, and now to consider the form in question a distinct species. The differences upon which this conclusion is based are in the habit of growth, the arrangement of the staminate spikelets and the nervation of their glumes, the form of the glumes of the pistillate flowers, and the ready disarticulation of the ripened ear.

It appears from descriptions, figures, and such specimens as I have seen of cultivated maize, that the staminate spikelets are in pairs at the joints of the rhachis, and their empty glumes 7–9-nerved. In the Mexican plant there are usually three and sometimes four together, one of them short-pedicelled, the others more nearly sessile. The empty glumes are 3–5-nerved and bicarinate, the flowering ones more narrow than in *Z. Mays*. The pistillate spikelets are in pairs at the joints of the rhachis, the internodes of which are more or less strongly margined and cupulate, and finally become hard and shining. The glumes are very broad, strongly concave and enfolding each other, much more so than in the flowers of *Z. Mays* that I have examined, and than they are represented in the figures of Nees and Doell. The

lower glume becomes very hard and rigid, excepting its margin, and firmly embraces the lower part of the kernel.

The ears upon the plants raised in the Botanic Garden were very variable, from scarcely two inches to four inches in length and three fourths of an inch broad, tapering slightly to an acutish apex, and with the kernels in four, eight, ten, and sometimes twelve, but most frequently in ten rows. A comparison of these shows clearly the structure of the ear. When there are only four rows, the ear is flattened and distichous, and the opposite pairs of rows are evidently the result of the pairs of spikelets regularly alternating upon the opposite sides of an extremely short-jointed and very flexuous rhachis. In the eight-rowed ear the rhachis is four-sided instead of two-sided, and in the ten-rowed it becomes five-sided. This latter case corresponds to the arrangement in the terminal raceme of the staminate inflorescence, where the spikelets are usually in five ranks. In the eight-rowed ear each joint bears two opposite pairs of spikelets, alternating with those of the joints immediately above and below, and in the twelve-rowed there are three pairs to each joint, alternating in the same way. The kernels are somewhat imbricated in the rows, and usually alternating, owing to one of the spikelets in each pair being slightly pedicellate. They are small, ovate, somewhat flattened dorsally and pointed, the lower part constricted by the closely embracing glume. In structure they are hard and corneous, with a central starchy layer extending from the base nearly to the apex. The ripened ear breaks readily at any point, so that the eight-rowed ear, for example, may be separated into its several joints, each bearing two opposite pairs of kernels. I would therefore characterize the new species as follows: —

Z. CANINA. Culms several from the same root, ascending, branched: staminate racemes often elongated and drooping; spikelets 2 to 4 (usually 3) at each node, one or more short-pedicelled; empty glumes 3–5-nerved, bicarinate: pistillate spikes sessile in the axils and terminal, the terminal staminate at the apex; ears small, 4–12-rowed, dividing more or less readily at the joints; kernels small (3 to 4 lines long), white, hard and smooth, ovate, acutish, constricted at base.

The location from which the specimens were obtained for Prof. Dugès is stated more definitely to be Moro Leon (otherwise Congregacion), near Uriangato, about four Mexican leagues north of Lake Cuitzco. It is therefore near the boundary line between the States of Guanajuato and Michoacan. The natives of the district are said by Prof. Dugès to believe the *maïs de coyote* to be the source of the cultivated varieties of maize, notwithstanding the recognized differ-

ences between them. The kinds of corn in cultivation about Guanajuato are described by Prof. Dugès as the *maïs arribeño*, with hard and shining kernels; *maïs commun*, softer and less shining, either yellow, black, or red; *maïs molonco*, resembling the last, but with smaller kernels, growing in the "bad lands," and the difference probably due to the poverty of the soil; and a popcorn, *maïs rosero*. All of these are affirmed to be very unlike the *maïs de coyote*, which appears to be known only in a wild state.

As shown by Dr. Sturtevant in the Report of the N. Y. Agricultural Experiment Station for 1886, the varieties of corn cultivated generally by the Indians of Mexico all come into the group designated by him as "soft corns" ("*Zea* amylacea*"), in which the broad flattened kernels are composed wholly of starchy matter in addition to the embryo. A peculiar kind was found by Dr. Palmer at the Indian village of San Padro, Guadalajara, of which Dr. Sturtevant forms the distinct group of "starchy sweet corns" ("*Zea* amylea-saccharata*"), intermediate between the sweet and soft corns, having a wrinkled exterior and the summit of the kernel corneous. It is evident that so far as the grain is concerned these have little resemblance to the *maïs de coyote*.

4. *Notes upon a Collection of Plants from the Island of Ascension.*

During the visit of the U. S. Eclipse Expedition of 1889 to the island of Ascension, Mr. E. J. Loomis of the Nautical Almanac Bureau, Washington, made a collection of such plants as chanced to attract his attention. Though very small, it adds some species to the previously known flora of the locality, a full account of which is given by Mr. W. B. Hemsley in the botanical report of the voyage of the "Challenger." The vegetation of the island, as there stated, is restricted almost wholly to "Green Mountain," an elevation of nearly 3,000 feet altitude, which condenses the moisture of the southeast trades, and is consequently subject to frequent rains and fogs. At about three hundred feet below the summit the peak is encircled by a nearly level road, known as "Elliott's Pass," which generally follows the very irregular contour of the mountain, but is occasionally carried through a spur by means of a tunnel. When these tunnels are short, they are lined throughout, roof and sides, with the most delicate and beautiful ferns, as are also the longer tunnels so far as daylight extends. It was on this part of the mountain that much of the collection was made.

The entire phænogamous flora native to the island, as given by Mr. Hemsley, includes but twelve species, and ten of these are marked by him as only doubtfully indigenous. The two other species, *Hedyotis Adscensionis* and *Euphorbia origanoides*, are endemic. The cryptogamous flora is somewhat more extensive, the same authority giving a list of fourteen ferns (including a *Lycopodium*), thirty-five mosses and hepatics, and a dozen lichens.

The following is a list of the species of every kind collected by Mr. Loomis, of which those in italics are without doubt introduced plants. The species of ferns described as new have been submitted to Prof. Eaton and to Mr. J. G. Baker. The mosses were determined by Prof. C. R. Barnes, the single hepatic by Prof. L. M. Underwood, and the lichens by Prof. Farlow. It is to be regretted that the opportunity could not have been improved to make a larger and more complete collection of the plants of the island, for it is probable that a thorough search would increase considerably the number of indigenous species now known.

Argemone Mexicana, L. Abundant.

Senebiera didyma, Pers.

Oxalis corniculata, L.

Rubus nanus. Stems very short (1 or 2 inches high), from a woody caudex, erect, armed with numerous short recurved prickles, about 3-flowered at the summit: stipules narrow, acuminate, entire or sparsely toothed; petioles short, pubescent and prickly; leaves mostly simple and rounded, subcordate at base, unequally and subincisely serrate, somewhat 3-lobed or sometimes ternate, sparsely villous above, prickly on the veins beneath: calyx small (about 4 lines broad), the base prickly: carpels rather numerous, on a depressed receptacle, glabrous; styles short. — Described from a single specimen found near the entrance of a tunnel in Elliott's Pass. It appears to be a very distinct and peculiar species of a genus not otherwise represented in the flora of the islands of the South Atlantic.

Bidens pilosa, L.

Lactuca Scariola, L. (?) Foliage only.

Euphorbia origanoides, L.

Commelina nudiflora, L.

Cyperus umbellatus, Benth. Foliage only.

Lycopodium cernuum, L.

Pteris incisa, Thunb.

Pteris flabellata, Thunb., var. Ascensionis, Hook. & Bak.

Asplenium Ascensionis. Stipes slender, tufted, an inch long or less, naked, dull brownish green; frond 3 to 6 inches long, often rooting at the apex, 6 to 10 lines broad, the rhachis channelled above and narrowly winged; pinnæ about 20 (15 to 25) on each side, very irregular in shape (nearly as in *A. fragile*), in the middle of the frond somewhat quadrilateral and nearly twice longer than broad, often more or less deeply lobed at base on the upper side, obtuse, irregularly and obtusely few-toothed or the lower margin entire, the lowermost usually round-deltoid, nearly equilateral and often lobed both sides, the uppermost becoming cuneate-obovate: sori linear-oblong, oblique, 1 to 6 on each side. — This adds another species to the closely allied *A. viride* group, intermediate between *A. fragile* and *A. vagans*. It is probably the same as the *A. dentatum* reported by Bory as collected on the island by D'Urville. Mr. Baker informs me that he also finds a specimen in Herb. Kew, among their *A. fragile*, which was given by "Don" (probably George, the younger, and collected by him on his trip to Sierra Leone) to Lindley in 1831.

Nephrodium molle, Desv. Specimens very variable and mostly much reduced.

Nephrodium (?) viscidum. More or less densely glandular-fibrillose throughout; stipes from a slender creeping rhizome, brown, about an inch long, bearing a lanceolate acuminate pinnate frond 3 inches long; pinnæ (except the upper ones) cleft nearly or quite to the midvein, the thin broadly oblong segments (1 to 2 lines long) obtuse, more or less crenate-serrate, glandular-villous beneath. — A single specimen, not in fruit, and the genus consequently indeterminate. Though strongly marked by its glandular-fibrillose character, it is not recognized by either Mr. Baker or Prof. Eaton. The former thinks it a starved *Nephrodium*, but "it cannot be *N. Ascensionis*," the only species excepting the last that is known from the island.

Gymnogramme Ascensionis, Hook.

Campylopus introflexus, Brid.

Rhacopilum gracile, Mitt.

Dicranella —— ?

Lejeunia pterota, Taylor.

Theloschistes chrysophthalma, Norm., var. flavicans, Wallr.

Parmelia saxatilis, Ach. ?

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